REMARKS

Claims 1 – 11 and 16 are pending in this application. Claim 5 has been amended to correct typographical errors.

The form of the Office Action is objected to because it skips around, taking the claims out of order and mixing arguments relating to one claim with arguments related to another claim, making it very hard to follow with reasonable thought. It is believed that this disjointed approach is at least partially the reason for the errors in the Office Action. However, insofar as possible, we will try to stay with the combinations of claim rejections as made in the Office Action.

CLAIM REJECTIONS – 35 USC §103

Claims 1, 3 – 5, and 7 – 11 have been rejected under 35 USC 103(a) as being unpatentable over the over Bhatnagar et al. (US Patent No. 6,391,146, hereinafter "the '146 Patent ") in view of Halsey et al. (US Patent No. 6,663,025, hereinafter "the '025 Patent"). This rejection is respectfully traversed.

With respect to claims 1 and 5, the Office Action alleges that the throttle valve 82 in the '146 patent reads on the first flow restricting element in claim 1, and admits that claim 1 does not include does not include the limitation that this FRE is an immobile flow restricting element. However, the Office Action alleges that the cited references teach diffuser 200 of the '125 patent can be substituted for the throttle valve 82 of the '146 patent. This is incorrect. The references teach exactly the opposite. The '146 patent teaches that item 200 is a diffuser and makes a clear distinction between a diffuser and a flow restriction element, such as flow restrictor 416. See FIG. 4A and column 6, lines 22 – 34. As taught in this paragraph, a flow restrictor limits gas flow. In contrast, the purpose of diffuser 200 is to provide low resistance to fluid flow (column 2, lines 28 – 32) and overcome the problems with diffusers of the prior art that hinder gas flow (column 2, lines 19 – 21). As stated in the '025 patent, "When used in pumping, on the other hand, the chamber can be pumped to vacuum more rapidly as there is no volume connected to the chamber via a restriction." This states unequivocally that the diffuser 200 is not a restriction. Thus, no one skilled in the art would think that the diffuser 200 of

the '025 patent can be substituted for an FRE. See also the attached Declaration Of Ofer Sneh, paragraph 16.

In addition, no one skilled in the art would insert the diffuser 200 of the '025 patent for the throttle valve 82 of the '146 patent. The diffuser has a huge surface area. No one skilled in the art would put such a part between a process chamber 35 as in the '146 patent that is outputting hazardous gas and other process byproducts and an abatement chamber 200. The '025 diffuser 200 intentionally slows the effluent down (see column 7, lines 5 – 19). The slowed effluent will deposit on the large surface area of diffuser 200 and cause clogging and difficulties in cleaning the system. Moreover, the diffuser 200 of the '025 patent is designed to enhance flow. Substituting the diffuser 200 of the '025 patent. for the throttle valve of the '025 patent would enhance flow in both directions at the position of the throttle valve, which would encourage back flow from the gas treatment system 210 into the process chamber 35. Thus, no one skilled in the art would make this substitution. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). In this case, the statement in the Office Action that one skilled in the art would substitute the diffuser of the '025 patent into the '146 patent does not really make sense, so it is merely a conclusory statement without rational underpinnings.

For the above reasons, claims 1 and 5 are patentable.

With respect to claims 3 and 7, the Office Action admits that the '146 patent does not teach a third FRE connected in serial fluidic communication down stream from the PCC, nor does it teach an abatement chamber connected in serial fluidic communication upstream from the third FRE. It is noted that the '025 patent does not teach this either. The Office Action, without citing a reference, states that this third FRE and the abatement chamber are obvious, and cites col. 6, lines 35-38 of as motivation to further prevent back flow of affluent. However, this discusses reasons for putting a throttle valve upstream from the alleged PCC. This is an example of an argument that is completely

erroneous under the patent law caused by the disjointed approach. Motivation is only relevant in the patent law when something is shown in a reference and the examiner needs to show why it should be combined with another reference. It has been rudimentary patent law for more than one hundred years that specific limitations distinguishing over the references should not be ignored or rejected by mere opinions of the examiner. *In re Glass*, 176 USPQ 489, 491 (CCPA 1973), and *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting the *In re Kahn* Federal Circuit statement with approval). Thus, claims 3 and 7 are patentable. In addition, these claims are patentable because they each depend on a patentable claim.

With respect to claims 4 and 8, the Office Action says that in the '146 patent process, chamber 25 and PCC 85 are formed as compartments within a single process vessel. Obviously, the Examiner is simply reading the current application into the '146 patent, since there is no evidence in the '146 patent that this is so, and the Examiner points to no such evidence. In fact , FIG. 1, which the Examiner cites, shows a break line between process chamber 25 and the alleged PCC 85, which breaks in the patent drawing convention indicate substantial separation between the parts. One skilled in the art would recognize from FIG. 1 that PCC 85 is a conduit, such as a tube connecting to separate vessels. See the attached Declaration Of Ofer Sneh, paragraph 23. Thus, claims 4 and 8 are patentable. In addition, these claims are patentable because they each depend on a patentable claim.

With respect to claims 9 – 11, these claims are patentable at least because they depend on a patentable claim, namely claim 5.

Claims 1, 2, 5, and 6 have been rejected under 35 USC 103(a) as being unpatentable over the '146 Patent in view of the '025 Patent. This rejection is respectfully traversed.

In this rejection, the Office Action interprets gas energized reactor 210 as being the PCC and the throttle valve 211 as being replaced by an immobile FRE. With respect to claims 1 and 5, here are three things wrong with this rejection, each of which shall be discussed in turn below.

First, one skilled in the art would not think an energized gas reactor is a PCC. See the Declaration Of Ofer Sneh, paragraph 19.

The second error in the rejection is that one skilled in the art would not replace the throttle valve 211 with the diffuser 200 of the '025 patent for the reasons discussed in connection with claims 1 and 5 above. That is, substituting the diffuser 200 of the '025 patent. for the throttle valve of the '025 patent would enhance flow in both directions at the position of the throttle valve, which would encourage back flow from the gas treatment system 210 into the real pressure control chamber 85. Thus, no one skilled in the art would make this substitution. Further, a device with the surface area of the diffuser 200 and which is made to encourage back flow through it would create a terrible cleaning problem. Further, those skilled in the art do not recognize the diffuser 200 as being a flow restriction device.

The third error relates to the fact that the Office Action also admits that, in this interpretation, the '146 patent does not contain a second FRE located in serial fluidic communication downstream from the PCC. The Office Action gets around this by arguing that, because there is a throttle valve at the inlet 211 of the gas energized reactor, it would be obvious to one skilled in the art to put a second throttle valve between the outlet of the gas energized reactor and the pumps "to prevent further backflow of effluent". There is no basis for this. As indicated in the attached Declaration Of Ofer Sneh, paragraphs 20 – 22, this is an attempt to find the invention in the reference. While there is a reason for the throttle valve between the reactor and the process chamber in the '146 patent, this reason does not warrant adding a second throttle valve before the pumps. It makes sense to have a throttle valve before the gas reaction chamber because the excursions in the process chamber can backflow into the process chamber, which is undesirable. Who cares, though, if the excursions in the reaction chamber cause flow into the pumps? Backflow from the pumps into the reactor makes no sense. The pumps are designed to pull gas out at a tremendous volume and rate, and if there was any possibility of backflow, one skilled in the art would just put in a bigger pump. Further, a restriction element between the pumps and the chamber that is pumped also makes no sense. This would only force the pumps to pull harder and make the whole system inefficient. See Declaration Of Ofer Sneh, paragraphs 21 and 22.

The Office Action also states in connection with this rejection that adding an additional throttle valve is merely duplication of parts. This is a misstatement of the law. The claim states that the

second throttle valve is at a specific location different than the first throttle valve. This is not duplication of parts under the law. Duplication of parts under the patent law means that two things do exactly the same thing as one thing. In *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8 (7th Cir. 1977) case cited by the Office Action, the duplication involved strengthening a paper bag by using several layers of paper, i.e., putting one bag inside the other. This is something baggers in grocery stores have been doing for fifty years. Putting a second throttle valve at an entirely different location in a complex deposition system does not amount to using two paper bags to make a bag stronger.

For the above reasons, claims 1 and 5 are patentable over this rejection. With respect to claims 2 and 6, there is an additional limitation that an abatement device is in the PCC. Here, in the first part of the sentence, the Office action says item No. 85 is the PCC. However, in the '146 patent, this chamber does not have an abatement device in it as the claim says. So, in the last part of the sentence, the Office Action says that item No. 210 is the chamber that has the abatement device in it. To meet the claim then, item No. 210 must be the PCC. Thus, to make this rejection, the Office changes what part is the PCC in the middle of the sentence. First it is the chamber 85, then it is the chamber 210. This is completely improper under the patent law. In construing a claim, the meaning of a term cannot change. Further, claims 2 and 6 are patentable at least because they depend on a patentable claim.

Claim 16 has been rejected under 35 USC 103(a) as being unpatentable over the '146 Patent. This rejection is respectfully traversed, particularly with respect to the amended claim 16 in which the limitation that the first FRE is an immobile FRE has been included.

In this rejection, the Office Action admits that, in the interpretation presented in the Office action, the '146 patent does not contain a second FRE located in serial fluidic communication downstream from the PCC. The Office Action gets around this by arguing that, because there is a throttle valve at the inlet 211 of the gas energized reactor, it would be obvious to one skilled in the art to put a second throttle valve between the outlet of the gas energized reactor and the pumps "to prevent further backflow of effluent". There is no basis for this. As indicated in the attached Declaration Of Ofer Sneh, paragraphs 18 and 19, this is an attempt to find the invention in the

reference. While there is a reason for the throttle valve between the reactor and the process chamber in the '146 patent, this reason does not warrant adding a second throttle valve before the pumps. See the Declaration, paragraph 19. As mentioned in the Declaration, backflow from the pumps into the reactor makes no sense. The pumps are designed to pull gas out at a tremendous volume and rate, and if there was any possibility of backflow, one skilled in the art would just put in a bigger pump. Further, a restriction element between the pumps and the chamber that is pumped also makes no sense. This would only force the pumps to pull harder and make the whole system inefficient.

The Office Action also states in connection with this rejection that adding an additional throttle valve is merely duplication of parts. This is a misstatement of the law. The claim states that the second throttle valve is at a specific location different than the first throttle valve. This is not duplication of parts under the law. Duplication of parts under the patent law means that two things do exactly the same thing as one thing, for example, connecting a plurality of concrete portions with a web that contain two ribs instead of one. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Moreover, the law states that if new and unanticipated results occur, the duplication is patentable. Here, two FREs in combination with the gas inlets and control valves as claimed don't just control back flow but rather result in an unexpectedly fast way to control pressure.

In view of the above amendments and remarks, Applicant believes the pending application is in condition for allowance. A one-month Petition For Extension Of Time and the appropriate fee are attached to this paper. If any additional fee is due, please charge our Deposit Account No. 50-1848, under Order No. 020008.0112PTUS from which the undersigned is authorized to draw.

Respectfully submitted,
PATTON BOGGS LLP

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By: /Carl A. Forest/
Carl A. Forest
Registration No.: 28,494
(303) 894-6114
(303) 894-9239 (Fax)
Attorney for Applicant

Customer No. 24283